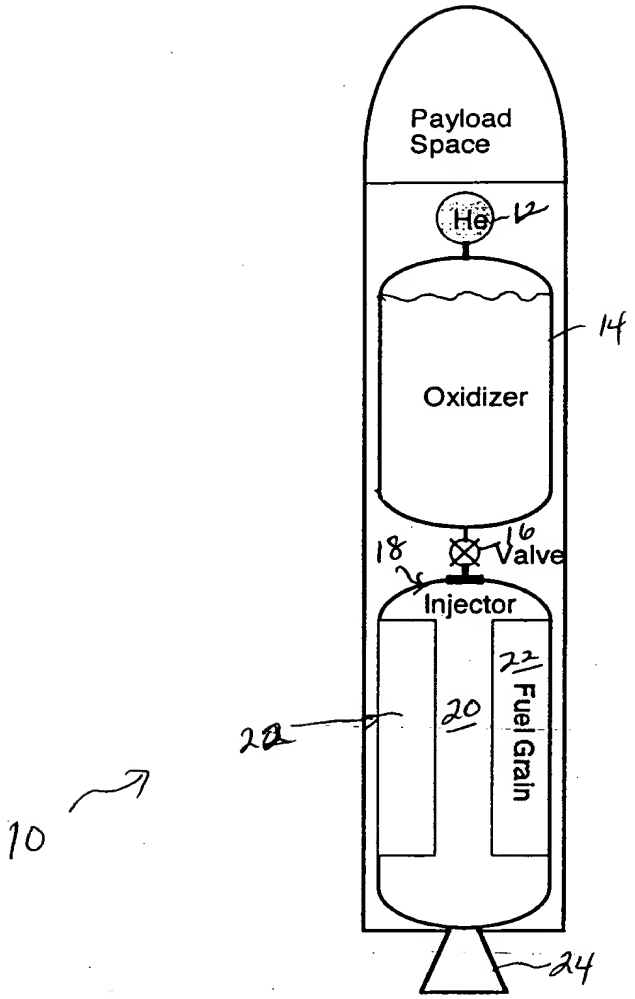

Figure 1: Schematic of a hybrid rocket utilizing a blow-down oxidizer feed system.

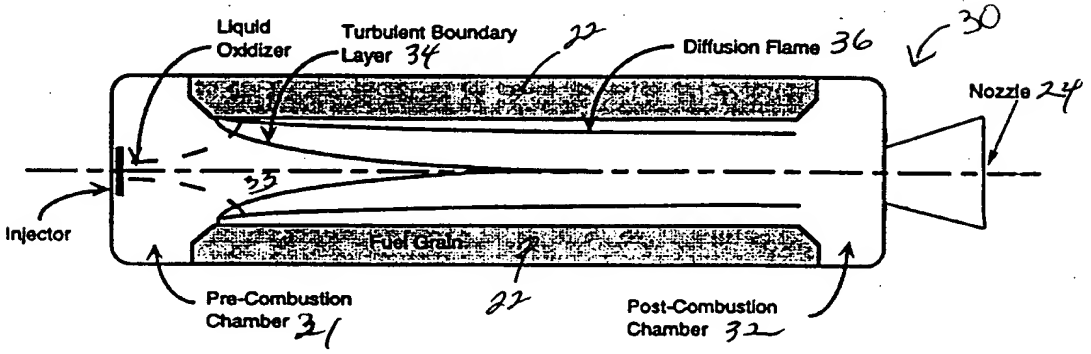

Figure 2. Schematic of a single port hybrid rocket motor.

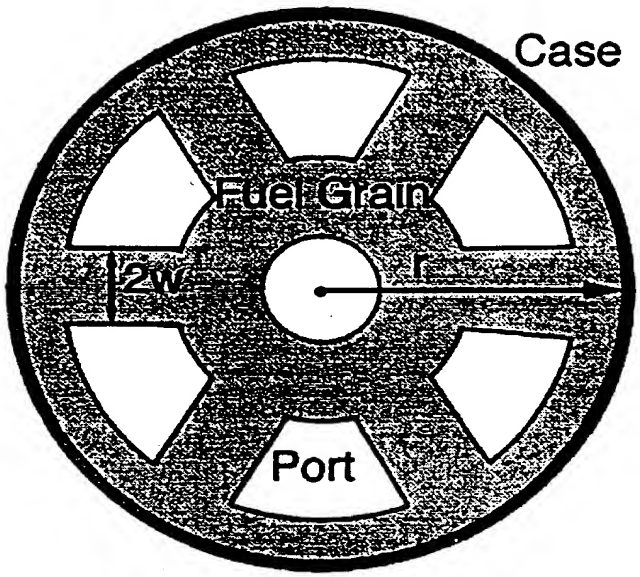

Figure 3: Schematic of a wagon wheel hybrid port configuration.

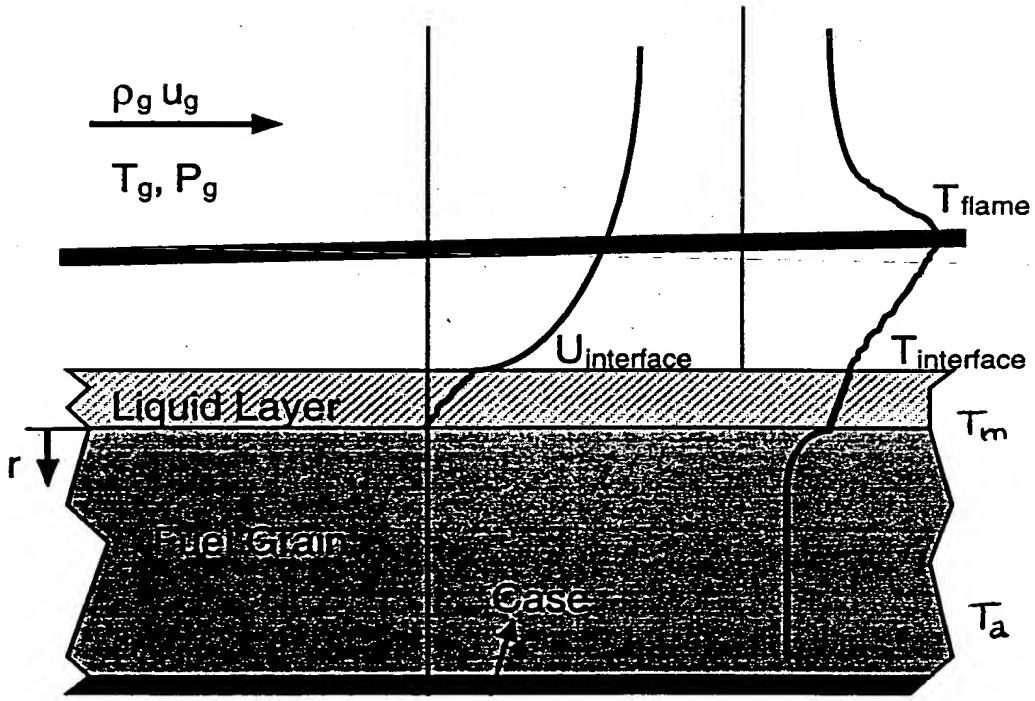

Figure 4: Schematic of velocity and temperature profiles in a liquefing hybrid rocket.

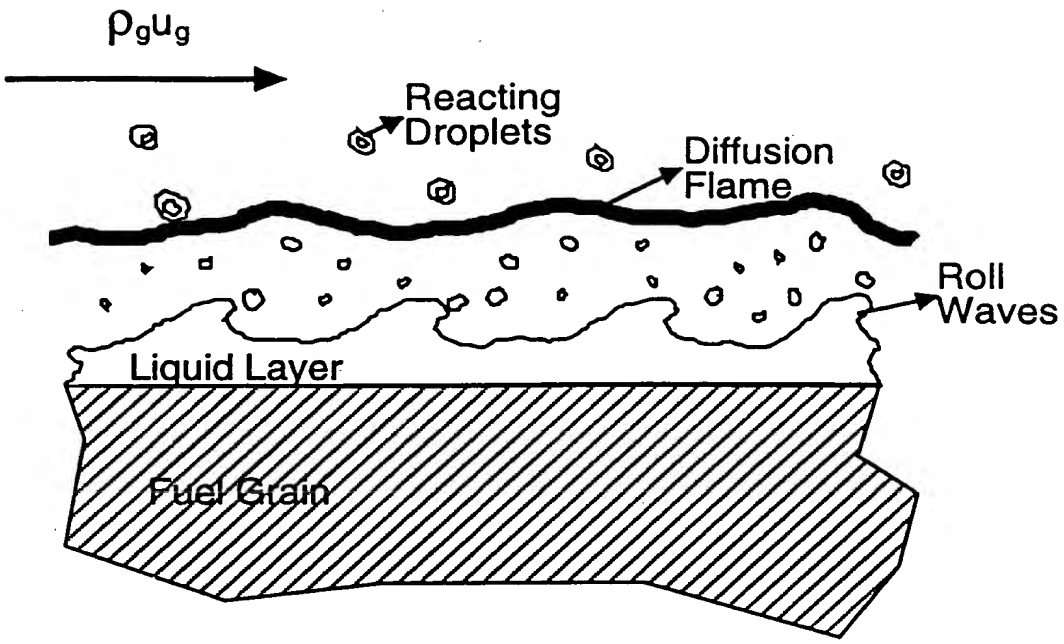

Figure 5: Schematic of the entaraining hybrid combustion configuration.

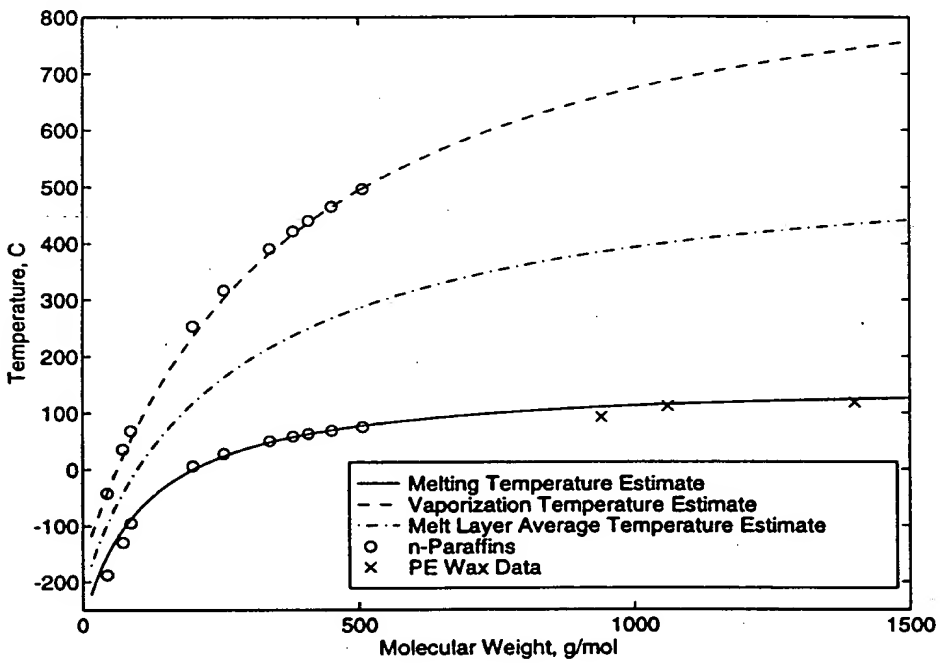

Figure 6. Melting, vaporization and average melt layer temperatures of n-paraffins as a function of molecular weight.

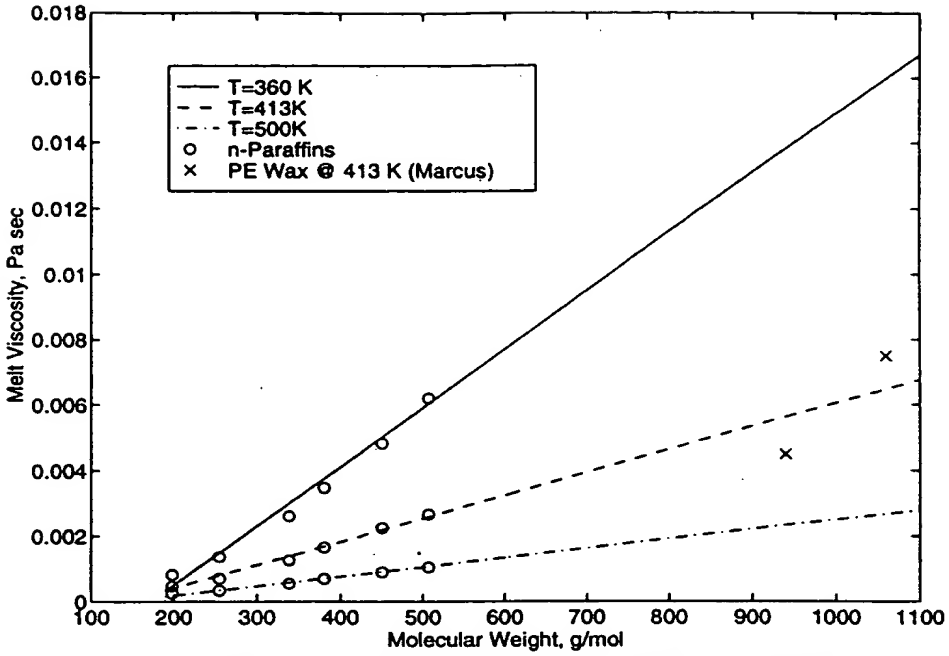

Figure 7. Viscosity as a function of the molecular weight for various n-parraffins and two highly crystalline polyethylene waxes.

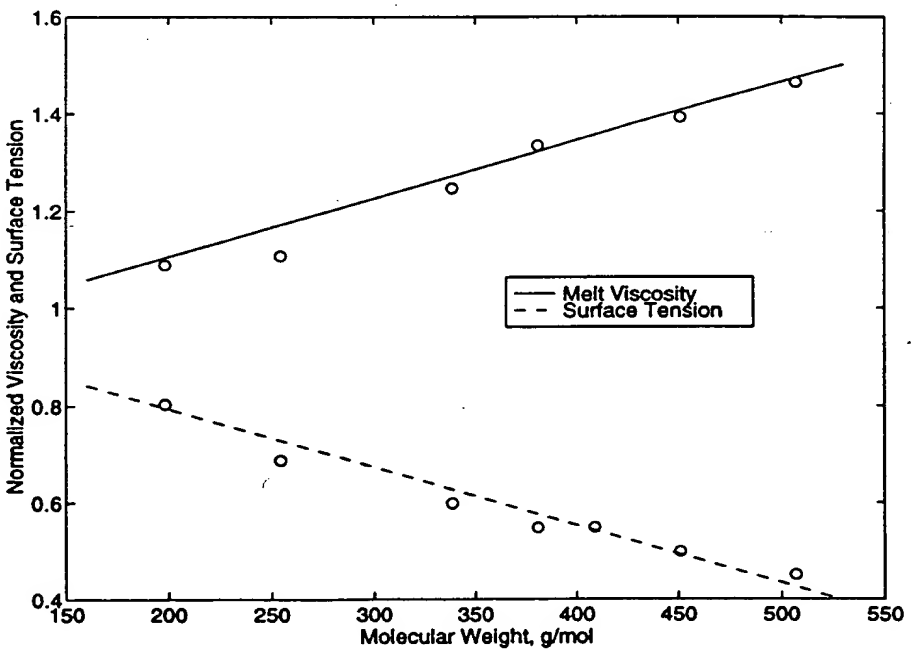

Figure 8. Viscosity and surface tension of the melt layer as a function of the molecular weight for various n-parraffins. The values of viscosity and surface tension are normalized with respect to the reference values (n-pentane).

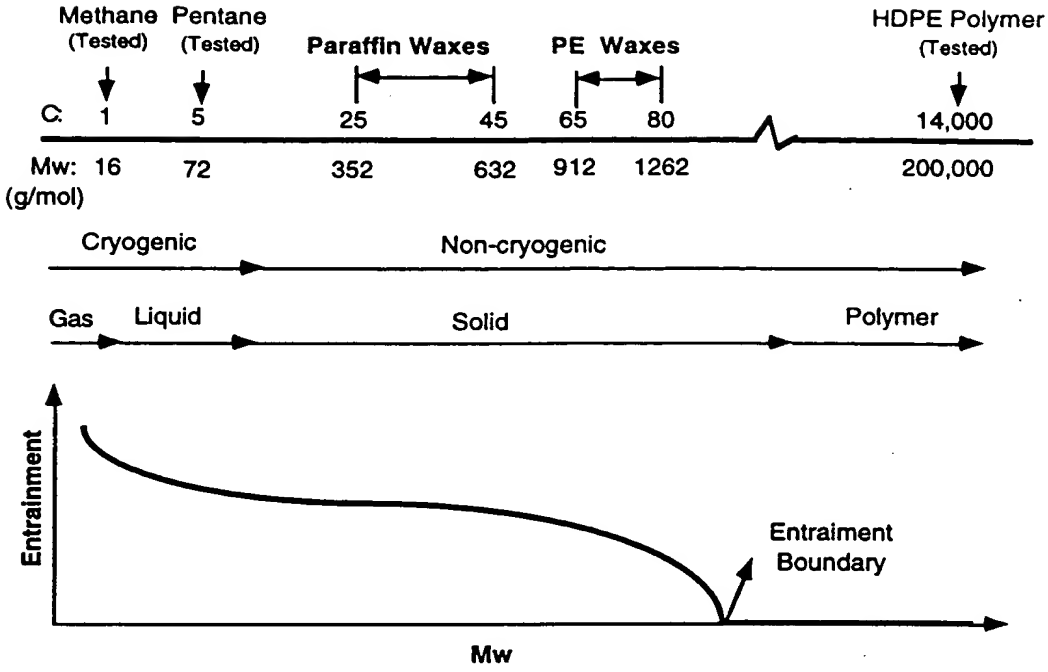

Figure 9. Overall picture for C_nH_{2n+2} series.

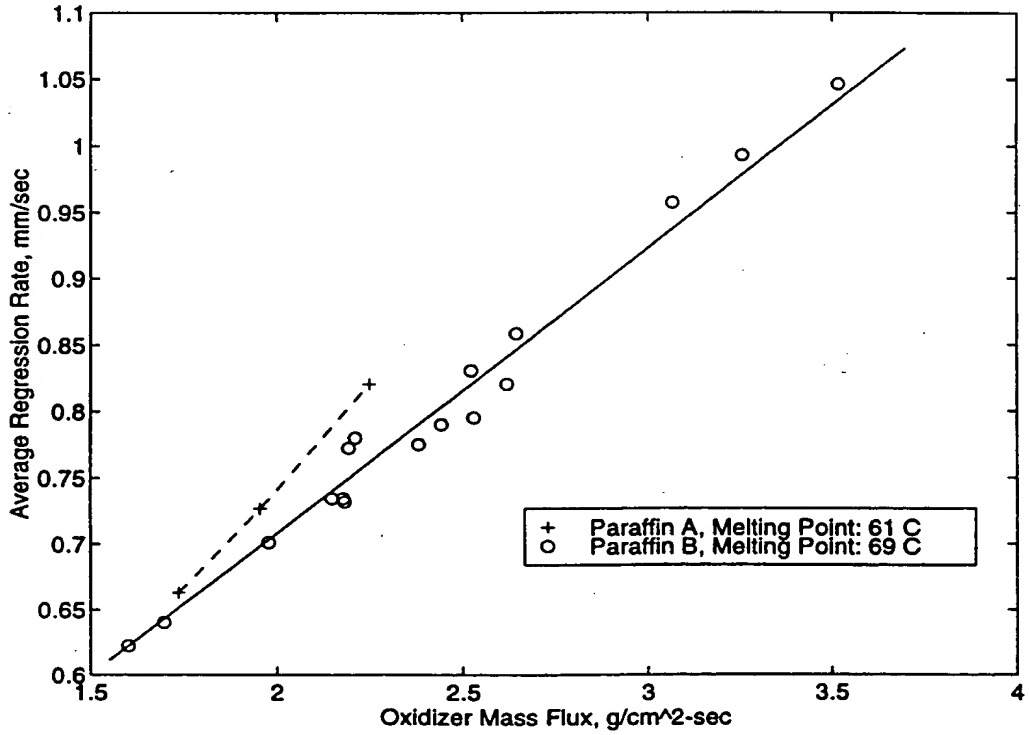

Figure 10: Measured regeression rates as a function of oxidizer mass flux for paraffins A and B.

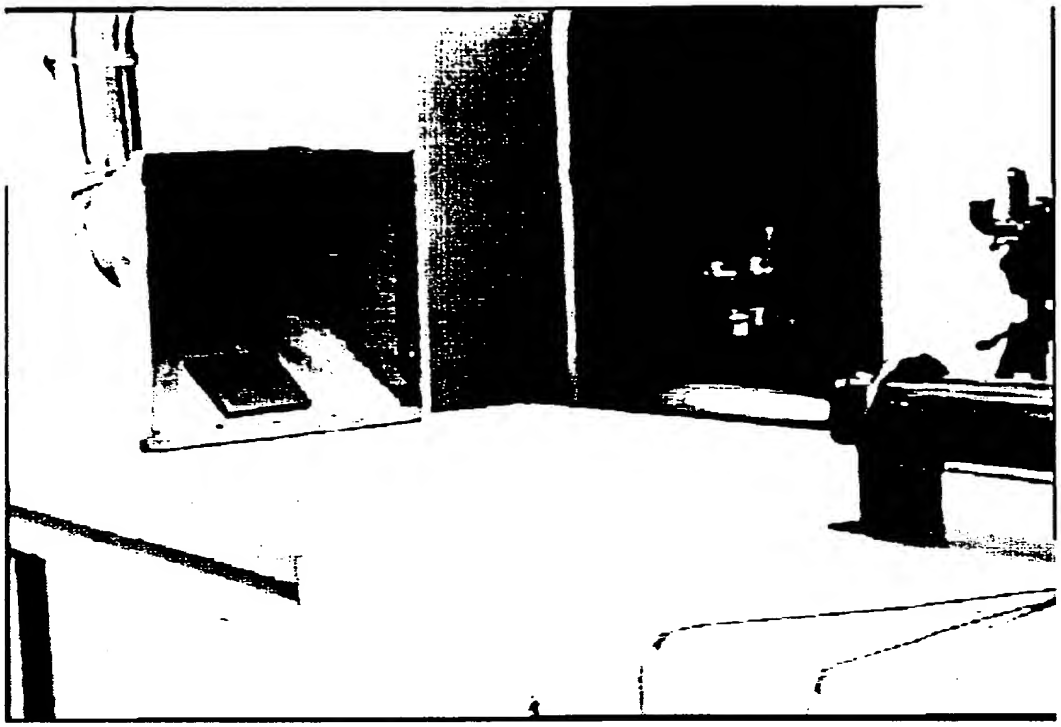

Figure 11a: Picture of the plume for the PMMA/GOX system.

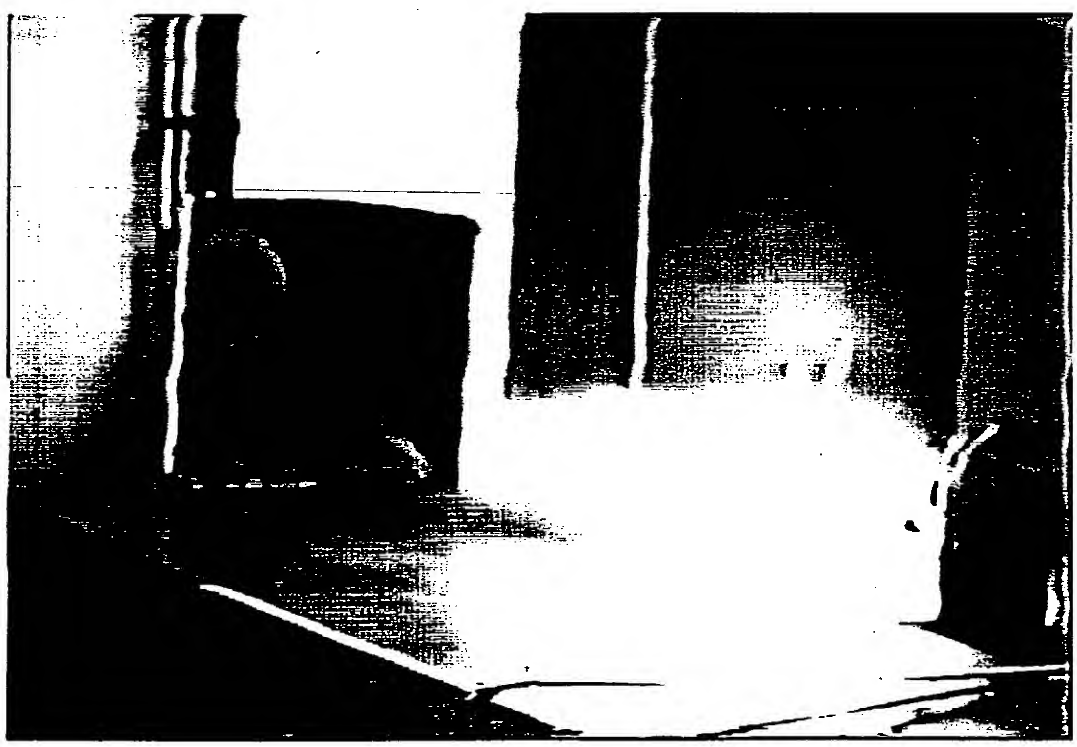

Figure 11b: Picture of the plume for the paraffin wax (grade B)/GOX system.

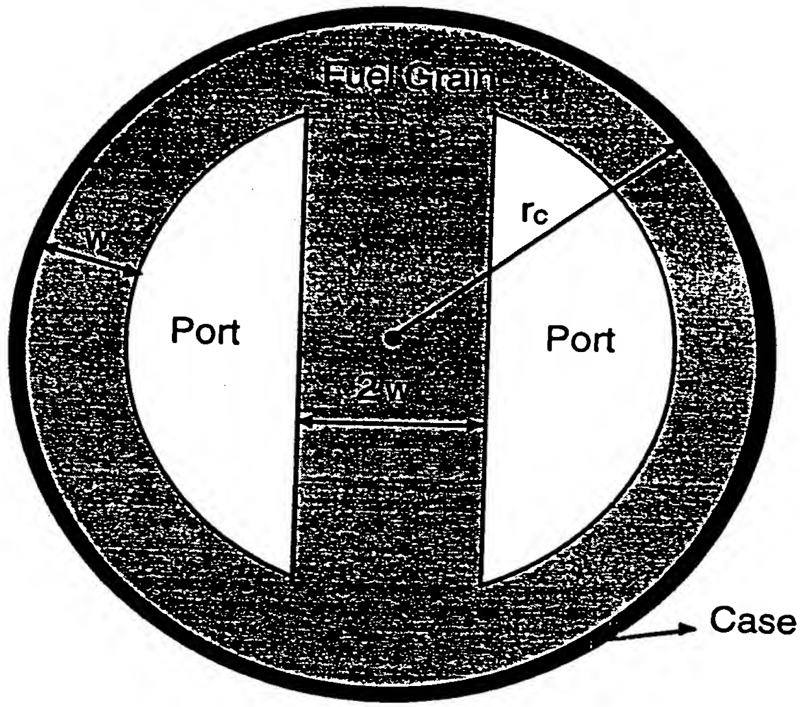

Figure 12a: Schematic of a Double-D hybrid port configuration

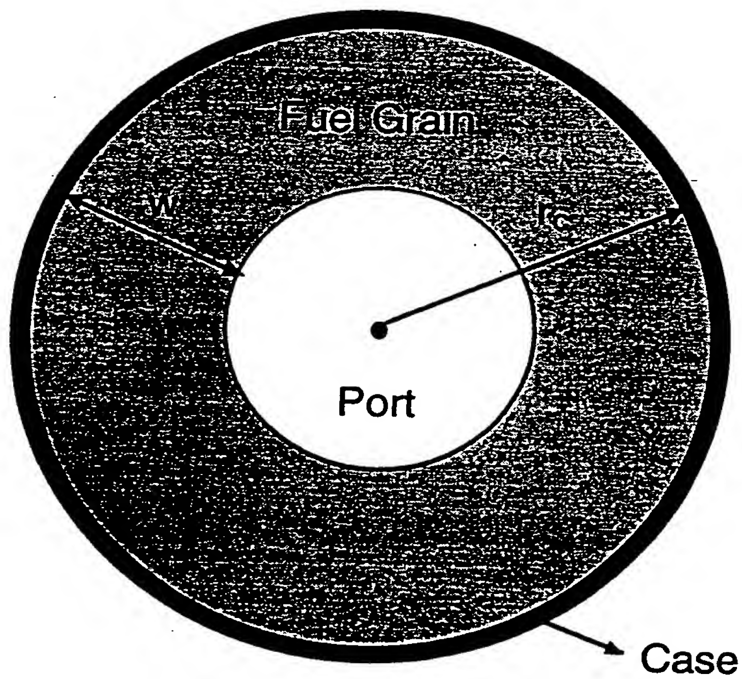

Figure 12b: Schematic of a circular (single port) hybrid port configuration

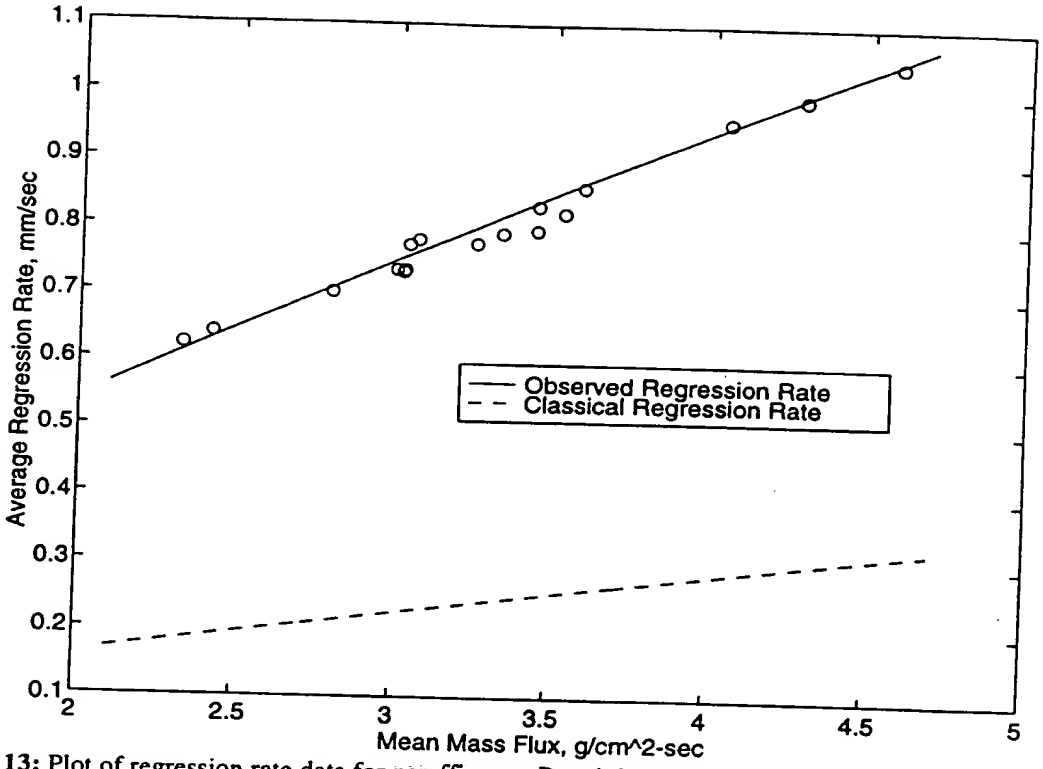

Figure 13: Plot of regression rate data for paraffin wax B and the estimated classical regression rate.